AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of generating and displaying a molecule network by a computer comprising:

using a database comprising information on biomolecule pairs and information on bio-events which correlates a bio-event to a biomolecule or a biomolecule pair which causes the bio-event, the computer searches information on biomolecule pairs for generating information on contiguous linkages of molecules wherein the number of the linkages is within a designated number, starting the search from a biomolecule designated by a user from biomolecules contained in a first molecule network representing linkages of ~~molecules~~ two or more biomolecule pairs linked in the network;

based on the information on biomolecule pairs obtained by the search, the computer generates and displays a second molecule network comprising the first molecule network and information on contiguous linkages of molecules which starts from the biomolecule designated by the user; and

the computer further searches and displays information on bio-events correlated to biomolecules or biomolecule pairs contained in the second molecule network.

2. (Previously Presented) The method of claim 1 wherein the information on bio-events comprises information on exaltation, increase, suppression or decrease of a bio-event in response to a quantitative or qualitative change of the biomolecule which causes the bio-event.

3. (Withdrawn) The method of claim 1 wherein:

the database further comprises information on biomolecules hierarchized by one or more items selected from modification state, active or inactive state, and structural change of a biomolecule; and

for the biomolecules contained in the second molecule network, the computer further searches and displays the information on the hierarchized biomolecules.

4. (Withdrawn) The method of claim 1 wherein:

the database further comprises information on biomolecule pairs wherein a complex of two or more biomolecules is treated as a biomolecule of the biomolecule pair, or information on biomolecule pairs wherein one or more complex-forming biomolecules are treated as one or more biomolecules of the biomolecule pair; and

the computer searches and displays the second molecule network comprising information on a complex of biomolecules.

5. (Withdrawn) The method of claim 1 wherein:

the database further comprises disease-related information on relations among two or more data items selected from biological responses, symptoms, syndromes, clinical marker values, complications and biomolecules related to a disease;

using the disease-related information, the computer searches a biomolecule related to a disease, a biological response, a symptom, a syndrome, a clinical marker value or a complication designated by the user; and

the computer generates the second molecule network starting from the biomolecule obtained by the search.

6. (Previously Presented) The method of claim 1 wherein:

the database further comprises information on directionality of relation between two molecules constituting a biomolecule pair; and

the computer carries out the search of information on biomolecule pairs based on directionality designated by the user.

7. (Previously Presented) The method of claim 1 wherein:

the database further comprises information on directionality of relation between two molecules constituting a biomolecule pair; and

the computer displays the second molecule network with information on directionality of relation of the biomolecule pairs contained in the second molecule network.

8. (Previously Presented) The method of claim 1 wherein:

the database further comprises one or more data items selected from

a relation code representing a relation between two molecules constituting a biomolecule pair,

a relation-function code representing a phenomenon or a change accompanied by direct binding of two molecules constituting a biomolecule pair,

a reliability code indicating reliability level of information on a biomolecule pair or an experimental method whereupon information on a biomolecule pair is proved,

information on an originating region where a biomolecule is originated,

information on an existing region where a biomolecule is stored after its generation, and

information on an acting region where a biomolecule causes a bio-event; and

the computer carries out the search of information on biomolecule pairs based on one or more data items selected from the data items contained in the database, wherein the one or more data items used for the search are designated by the user.

9. (Withdrawn) The method of claim 1 wherein:

the database further comprises disease-biomolecule information on correlation between a disease and a biomolecule for which quantitative and/or qualitative fluctuation is observed in the disease;

using the disease-biomolecule information, the computer searches a biomolecule related to a disease designated by the user; and

the computer generates the second molecule network starting from the biomolecule obtained by the search.

10. (Previously Presented) The method of claim 1 wherein:

the first molecule network is selected by the user from one or more molecule networks comprising a biomolecule, a biomolecule pair, or a drug molecule designated by the user.

11. (Currently Amended) The method of claim 1 wherein the first molecule network is information on linkages of ~~molecules~~ two or more biomolecule pairs linked in the network which is obtained by:

using the database comprising information on biomolecule pairs, the computer searches information on biomolecule pairs for generating information on linkages of molecules, starting the search from a biomolecule, a biomolecule pair, or a drug molecule designated by the user; and

based on the information on biomolecule pairs obtained by the search, the computer generates, as the first molecule network, information on linkages of ~~molecules~~ two or more biomolecule pairs linked in the network which starts from the biomolecule, the biomolecule pair or the drug molecule designated by the user.

12. (Previously Presented) The method of claim 10 wherein:

the database further comprises information on directionality of relation between two molecules constituting a biomolecule pair; and

based on the information on directionality, the computer further scores one or more molecule networks comprising a biomolecule, a biomolecule pair, or a drug molecule designated by the user.

13. (Previously Presented) The method of claim 12 wherein:

the database further comprises one or more data items selected from

a relation code representing a relation between two molecules constituting a biomolecule pair,

a relation-function code representing a phenomenon or a change accompanied by direct binding of two molecules constituting a biomolecule pair,

a reliability code indicating reliability level of information on a biomolecule pair or an experimental method whereupon information on a biomolecule pair is proved,

information on an originating region where a biomolecule is originated,

information on an existing region where a biomolecule is stored after its generation, and

information on an acting region where a biomolecule causes a bio-event; and

based on one or more data items selected from the data items contained in the database, the computer further scores one or more molecule networks comprising a biomolecule, a biomolecule pair, or a drug molecule designated by the user.

14. (Previously Presented) The method of claim 1 wherein:

the database further comprises information on bio-events which correlates a bio-event to a biomolecule or a biomolecule pair which causes the bio-event; and

the first molecule network is selected by the user from one or more molecule networks comprising a biomolecule or a biomolecule pair correlated with a bio-event designated by the user.

15. (Currently Amended) The method of claim 1 wherein the first molecule network is information on linkages of ~~molecules~~ two or more biomolecule pairs linked in the network which is obtained by:

using the database comprising information on biomolecule pairs, the computer searches information on biomolecule pairs for generating information on linkages of molecules, starting the search from a biomolecule or a biomolecule pair correlated with a bio-event designated by the user; and

based on the information on biomolecule pairs obtained by the search, the computer generates, as the first molecule network, information on linkages of ~~molecules~~ two or more biomolecule pairs linked in the network which starts from the biomolecule or the biomolecule pair correlated with the bio-event designated by the user.

16. (Previously Presented) The method of claim 1 wherein:

the first molecule network is generated by combining two or more different molecule networks based on information on a biomolecule which is common to the molecule networks.

17. (Previously Presented) A method of analyzing information on quantitative or qualitative changes of biomolecules using the method of claim 1.

18. (Withdrawn) A method of analyzing information on gene expression using the method of claim 1.

19. (Withdrawn) A method of analyzing information on protein expression using the method of claim 1.

20-24. (Canceled)

25. (Currently Amended) A computer-readable non-transitory medium which stores the program for carrying out the method of claim 1.